[012] In another embodiment, there exists a connection to the pressure medium acting upon the first piston area to a valve unit whose pressure medium supply is the pressure medium acting upon the first piston area and which according to a nominal value setting guides this pressure medium to the second piston area. The same pressure thus acts upon the first and the second piston areas when the valve unit is fully open whereby the clutch is in opening direction and transmits no torque. By reducing the pressure upon the second piston area, the pressure of the first piston area prevails and the clutch is actuated in closing direction. Depending on the variation of the pressure acting upon the first piston area and the nominal value setting, the pressure acting upon the second piston area is adjusted by the valve unit. In one other embodiment, a connection exists between the pressure medium acting upon the first piston area and a valve unit, said pressure medium and thus the pressure assuming a pure control function of the valve unit. The second piston area is supplied with pressure medium by a source which can be, for example, a hydraulic pump, in addition, which assumes the through flow of the hydrodynamic torque converter or a lubrication pump of a powershift transmission. The valve unit guides pressure medium from said hydraulic pump according to the pressure acting upon the first piston area and the nominal value setting in the space formed with the second piston area. In another embodiment, the valve units described can be combined with the electronic control unit and, in addition, it is possible to issue the output signal of the electronic control unit to a proportional valve which then adjusts the clutch pressure acting upon the second piston area. In another embodiment, it is possible in the electronic control unit to process together correction factors like, for example, the rotational speed of the prime mover, the rotational speed of the pump impeller, the rotational speed of the turbine impeller, one characteristic of the hydrodynamic converter, the rotational speed on one output or measured torque on parts of the hydrodynamic converter or on parts of the transmission.

1-9. (CANCELED)

10. (CURRENTLY AMENDED) A hydrodynamic torque converter located in a housing (1) comprising:

at least one clutch (2);

an actuation device having at least one piston (3);

a hydraulic pressure within said housing (1) acting upon a first piston area (4);

a hydraulic pressure changeable by a control unit (11) acting upon a second piston area (5);

the hydraulic pressure acting upon said first piston area (4) acting directly or indirectly upon said control unit (11) and said control unit (11) adjusts the hydraulic pressure upon said second piston area (5) depending on the hydraulic pressure upon said first piston area (4); and

wherein one drive mechanism of said torque converter (1) is connectable via said at least one clutch (2) with one pump impeller (6) of said torque converter.

11. (CANCELED)

12. (CURRENTLY AMENDED) The hydrodynamic torque converter according to claim [[10]] 11, wherein said control unit (11) has one valve unit, a pressure medium supply of which is connected with a pressure medium acting upon said first piston area (4) and which depending on a nominal value setting (12) connects the pressure medium acting upon said first piston area (4) with a pressure medium acting upon said second piston area (5).

13. (CURRENTLY AMENDED) The hydrodynamic torque converter according to claim [[10]] 11, wherein said control unit (11) has one valve unit connected with a pressure medium acting upon said first piston area (4), the valve unit receives a pressure medium supply (16) connected with a pressure medium source of a transmission pump and which depending on a nominal value setting (12) and the internal hydraulic pressure, acts upon said second piston area.

14. (CURRENTLY AMENDED) The hydrodynamic torque converter according to claim [[10]] 11, wherein a pressure sensor (17) determines the hydraulic pressure acting upon said first piston area (4) and an electronic control unit (18) adjusts the hydraulic pressure acting upon said second piston area (5) depending on a nominal value setting.

15. (PREVIOUSLY PRESENTED) The hydrodynamic torque converter according to claim 14, wherein one rotational speed sensor (20) determines a rotational speed of a pump impeller (6) and said electronic control unit (18), depending on a rotational speed of said pump impeller (6), adjusts the pressure acting upon said first piston area (4) and a nominal speed setting the pressure acting upon said second piston area.

16. (PREVIOUSLY PRESENTED) The hydrodynamic torque converter according to claim 12, wherein a space (10) formed by said converter housing (1) and said first piston area (4) is connected via one line (9) with said valve unit (11).

17. (PREVIOUSLY PRESENTED) The hydrodynamic torque converter according to claim 16, wherein said line (9) is located in a non-rotatable shaft connected with a stator.

18. (CURRENTLY AMENDED) The hydrodynamic torque converter according to claim [[10]] 11, wherein a supply line (13) of the pressure medium acting upon said second piston area (5) is located in a non-~~turnable~~ rotatable shaft connected with a stator.

19. (NEW) A hydrodynamic torque converter located in a housing (1) comprising:

a drive mechanism connectable via an input clutch (2) to a pump impeller within said torque converter housing;

an actuation device for closing the input clutch (2) and connecting the drive mechanism to the pump impeller, the actuation device comprising at least one piston (3) having a first piston area (4) and an oppositely disposed second piston area (5);

an internal hydraulic pressure within said housing (1) acting upon the first piston area (4) and a second hydraulic pressure changeable by a control unit (11) acting upon the second piston area (5);

wherein the internal hydraulic pressure acting upon said first piston area (4) is applied to said control unit (11) and said control unit (11) adjusts the second hydraulic pressure upon said second piston area (5) depending on the internal hydraulic pressure to regulate the input clutch connecting the drive mechanism to the pump impeller.

20. (NEW) The hydrodynamic torque converter according to claim 19, wherein said control unit (11) comprises a valve unit receiving a pressure medium supply from the first piston area (4) at the internal hydraulic pressure and connecting the pressure medium supply to the second piston area (5) with the internal hydraulic pressure altered according to a nominal value setting (12) of the valve unit to obtain the second hydraulic pressure acting on the second piston area (5) and a differential hydraulic pressure which actuates the at least one piston (3).

21. (NEW) The hydrodynamic torque converter according to claim 19, wherein said control unit (11) comprises a valve unit receiving the internal pressure medium from the first piston area (4) at the internal hydraulic pressure, the valve unit also receiving a second pressure medium supply (16) from a transmission pump and connecting the second pressure medium supply (16) to the second piston area (5), with the second pressure medium supply altered according to the internal hydraulic pressure and a nominal value setting (12) of the valve unit to obtain the second hydraulic pressure acting on the second piston area (5) and a differential hydraulic pressure which actuates the at least one piston (3).

22. (NEW) The hydrodynamic torque converter according to claim 19, wherein a pressure sensor (17) determines the internal hydraulic pressure acting upon said first piston area (4) and an electronic control unit (18) adjusts the second hydraulic pressure acting upon said second piston area (5) depending on a nominal value setting.

23. (NEW) The hydrodynamic torque converter according to claim 22, wherein a rotational speed sensor (20) determines a rotational speed of the pump impeller (6), and said electronic control unit (18) adjusts the second hydraulic pressure according to the rotational speed of said pump impeller (6) and the internal hydraulic pressure acting upon said first piston area (4).

24. (NEW) The hydrodynamic torque converter according to claim 20, wherein a space (10) formed by said converter housing (1) and said first piston area (4) is connected via a hydraulic line (9) with said valve unit (11).

25. (NEW) The hydrodynamic torque converter according to claim 24, wherein said hydraulic line (9) is located in a non-rotatable shaft connected with a stator.

26. (NEW) The hydrodynamic torque converter according to claim 19, wherein a hydraulic supply line (13) for the second hydraulic pressure acting upon said second piston area (5) is located in a non-rotatable shaft connected with a stator.

27. (NEW) A hydrodynamic torque converter located in a housing (1) comprising:

a drive mechanism connectable via an input clutch (2) to a pump impeller within said torque converter housing;

an actuation device for closing the input clutch (2) and connecting the drive mechanism to the pump impeller, the actuation device comprising at least one piston (3) having a first piston area (4) and an oppositely disposed second piston area (5);

an internal hydraulic pressure within said housing (1) acting upon the first piston area (4) and a second hydraulic pressure changeable by a control unit (11) acting upon the second piston area (5);

the internal hydraulic pressure acting upon said first piston area (4) is applied to said control unit (11) and said control unit (11) adjusts the second hydraulic pressure upon said second piston area (5) depending on the internal hydraulic pressure to regulate the input clutch connecting the drive mechanism to the pump impeller; and

wherein a pressure sensor (17) determines the internal hydraulic pressure acting upon said first piston area (4) and an electronic control unit (18) adjusts the second hydraulic pressure acting upon said second piston area (5) depending on a nominal value setting.

28. (NEW) The hydrodynamic torque converter according to claim 27, wherein a rotational speed sensor (20) determines a rotational speed of the pump impeller (6), and said electronic control unit (18) adjusts the second hydraulic pressure according to the rotational speed of said pump impeller (6) and the internal hydraulic pressure acting upon said first piston area (4).